

## REMARKS

The Examiner is thanked for the indication that claims 1-4 and 19-21 are allowed.

Claims 1-10, 14-17, and 19-28 remain pending in the instant application. Claims 5-10, 14-17, and 22-28 presently stand rejected. Claims 8, 16, 23, and 26 are amended herein. Entry of this amendment and reconsideration of the pending claims are respectfully requested.

### *Drawings*

In the Office Action mailed April 2, 2003, the Examiner did not indicate whether the drawings are accepted. Accordingly, Applicants respectfully request an indication from the Examiner to that effect.

### *Claim Rejections – 35 U.S.C. § 112*

Claims 26-28 stand rejected under 35 U.S.C. § 112, first paragraph as a single means claim. Amended claim 26 now further recites, “a beam combiner to combine the optical signal with one or more other optical signals.” Although Applicants submit that claim 26 is not a “means for” claim and therefore should not be interpreted under 35 U.S.C. § 112, sixth paragraph, claim 26 has been amended to include two distinct elements. Consequently, claim 26 cannot be a single means claim. Accordingly, Applicants respectfully submit that the § 112, first paragraph rejection has been overcome and request that the instant rejection be withdrawn.

### *Claim Rejections – 35 U.S.C. § 103*

Claims 5-10, 14-17, and 22-28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No.: 6,314,220 B1 to Mossberg et al (“Mossberg”) in view of U.S. Patent No. 5,841,776 to Chen (“Chen”) and further in view of U.S. Patent No.: 5,808,764 to Frigo et al (“Frigo”).

“To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. All words in a claim must be

considered in judging the patentability of that claim against the prior art.” M.P.E.P. § 2143.03.

Independent claim 5 recites in pertinent part, “a second station that is coupled to receive a decoded output signal from the first station.” Applicants submit that Mossberg, Chen, and Frigo, either alone or in combination, fail to disclose, teach, or fairly suggest a second station coupled to receive a decoded output signal from a first station.

The Examiner acknowledged that Mossberg “does not specifically teach applying a composite code to an optical data signal and *the second station coupled to receive a decoded output signal from the first station.*” Office Action mailed April 2, 2003, page 3, section 5. Emphasis added. To overcome this deficiency in Mossberg, the Examiner cites Frigo as disclosing “a second station is coupled to receive a decoded output signal from a first station (Figures 4A, 5, and 7, col. 6, lines 53-67, col. 7, lines 1-53).” *Id.* Applicants respectfully disagree that Frigo discloses, teaches, or suggests a second station coupled to receive a *decoded output signal* from the first station.

Referring to FIG. 2 of Frigo, Frigo discloses a passive optical network (“PON”) 100 having a central office 20 optically linked to multiple optical network units (“ONUs”) 40 via first-order remote nodes 30’ and second-order remote nodes 30”. See, e.g., Frigo, col. 5, lines 33-50. Light propagating downstream from central office 20 to first-order remote node 30’ contains multiple signals carried on one fiber 25<sub>D</sub> using wavelength division multiplexing (“WDM”). Thus, light propagating downstream in PON 100 fails to teach a single optical data signal having a composite code applied thereto; rather, multiple signals having different wavelengths that are multiplexed together. Consequently, second-order remote node 30” ***does not decode an output signal*** from first-order remote node 30’, but instead ***demultiplexes*** the multiple output signals received from first-order remote node 30’ and directs the individual demultiplexed signals to respective ONUs 40. See, e.g., Frigo, col. 5, lines 35-39.

Thus, Frigo fails to teach or suggest a second station coupled to receive a decoded output signal from a first station, since Frigo instead discloses demultiplexing multiple signals. Consequently, the combination of Mossberg, Chen, and Frigo fail to teach or suggest all elements of claim 5, as required under M.P.E.P. § 2143.03.

Accordingly, Applicants request that the instant § 103(a) rejection of claim 5 be withdrawn.

Amended independent claim 8 now recites in pertinent part, “the second destination to receive the stripped signal from the first destination after the signal is stripped of the first downstream address code by the first destination.” Applicants submit that Mossberg, Chen, and Frigo, either alone or in combination, fail to disclose, teach, or fairly suggest the above-recited elements of claim 8.

As stated above in connection with claim 5, the Examiner acknowledged that Mossberg fails to teach a “*second station coupled to receive a decoded output signal from the first station.*” *Office Action* mailed April 2, 2003, page 3, section 5. Emphasis added. As discussed above, Frigo discloses demultiplexing downstream light signals to direct a particular signal to an intended ONU 40. However, Frigo fails to teach or suggest a second destination to receive a signal stripped of a downstream address code by a first destination.

Consequently, the combination of Mossberg, Chen, and Frigo fail to teach or suggest all elements of amended claim 8, as required under M.P.E.P. § 2143.03. Accordingly, Applicants respectfully request that the instant § 103(a) rejection of claim 8 be withdrawn.

Amended independent claim 16 now recites, “broadcasting the optical signal to a user station via the first station and the second station; and stripping the first temporal code from the optical signal at the first station.” For the reasons discussed in connection with claims 5 and 8, Applicants respectfully submit that amended independent claim 16 is nonobvious over the combination of Mossberg, Chen, and Frigo. Accordingly, Applicants request that the instant § 103(a) rejection of claim 16 be withdrawn.

Amended independent claim 23 now recites, “the first-level code is added by the first station to the second-level code of the output signal” of the second station. Just as the Examiner acknowledged that Mossberg fails to teach or suggest a second station coupled to receive a decoded output signal from a first station, Mossberg similarly fails to teach or suggest the reverse process of adding a first level code by a first station to a second-level code of a signal output by a second station. Furthermore, as discussed above, Frigo discloses wavelength multiplexing and demultiplexing individual signals

with multiple remote nodes, but fails to teach or suggest adding a first-level code by a first station to a second-level code of an output signal received from a second station.

Consequently, the combination of Mossberg, Chen, and Frigo fail to teach or suggest all elements of amended claim 23, as required under M.P.E.P. § 2143.03. Accordingly, Applicants respectfully request that the instant § 103(a) rejection of claim 23 be withdrawn.

Independent claim 26 recites in pertinent part, “an encoder to encode an optical signal to designate the multiplexing station’s level.” Applicants submit that the combination of Mossberg, Chen, and Frigo do not disclose, teach, or suggest such an encoder.

More specifically, Mossberg and Chen do not teach or suggest multiple levels of multiplexing stations and therefore cannot teach or suggest encoding an optical signal to designate a multiplexing station’s level. As discussed above, Frigo discloses multiplexing multiple signals together using wavelength division multiplexing (“WDM”). *See, e.g.*, Frigo, col. 5, lines 52-55. However, combining signals using WDM is very different than encoding an optical signal to designate a multiplexing station’s level. Referring to FIG. 2 of Frigo, first-order remote node 30’ demultiplexes by wavelength or wavelength band using a wavelength grating router (“WGR”). *See, e.g.*, Frigo, col. 5, lines 36-39. Thus, first-order remote node 30’ separates wavelengths or wavelength bands and directs the separated wavelengths or wavelength bands to the second-order remote nodes 30”. The second-order remote nodes 30” isolate individual signals by wavelength and direct the individual signals to the appropriate ONU 40. *See, e.g.*, Frigo, col. 5, lines 43-49. Isolating signals based on wavelength or multiplexing signals based on wavelength does not disclose, teach, or fairly suggest encoding an optical signal to designate a multiplexing station’s level. This is evident in Frigo since a downstream signal having a specific wavelength will pass through both first-order remote node 30’ and second-order remote node 30” without being encoded to designate the level of first-order remote node 30’ or the level of second-order remote node 30”.

Consequently, the combination of Mossberg, Chen, and Frigo fail to teach or suggest all elements of claim 26, as required under M.P.E.P. § 2143.03. Accordingly,

Applicants respectfully request that the instant § 103(a) rejection of claim 26 be withdrawn.

Dependent claims 6-7, 9-10, 14-16, 22, 24, 25, 27, and 28 are nonobvious over the prior art of record for at least the same reasons as discussed above in connection with their respective independent claims, in addition to adding further limitations of their own. Accordingly, Applicants respectfully request that the instant § 103(a) rejections for claims 6-7, 9-10, 14-16, 22, 24, 25, 27, and 28 be withdrawn.

### **CONCLUSION**

In view of the foregoing amendments and remarks, Applicants believe the applicable rejections have been overcome and all claims remaining in the application are presently in condition for allowance. Accordingly, favorable consideration and a Notice of Allowance are earnestly solicited. The Examiner is invited to telephone the undersigned representative if the Examiner believes that an interview might be useful for any reason.


### CHARGE DEPOSIT ACCOUNT

It is not believed that extensions of time are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a). Any fees required therefore are hereby authorized to be charged to Deposit Account No. 02-2666. Please credit any overpayment to the same deposit account.

Respectfully submitted,

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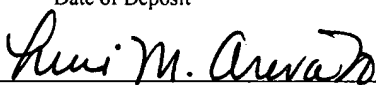
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